

Do evidence practice gaps exist for medication prescription at hospital discharge in patients undergoing coronary artery bypass and coronary angioplasty

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Background: Adherence to guideline directed medical therapy (GDMT) although mandatory after CABG & percutaneous coronary intervention (PCI), is often sub-optimal at hospital discharge. Since relevant data are lacking from our country, we performed a retrospective analysis of medication advice following CABG and PCI from 2010-2013.

Methods: A total of 5258 records (PCI/CABG:86.2vs13.8%) were studied.

Results: Presentation with stable angina was commoner in CABG group (61.4 vs 39.4%, $p < 0.001$) while ACS was more in PCI group (61.6 vs 38.9% $p < 0.001$). Prescription rates for dual anti-platelets (aspirin 100% vs 99%, clopidogrel 100% vs 96.9%), beta blockers (98.4% vs 93.7%) and statins (99.1% vs 90.9%) were similar in PCI & CABG groups. ACE inhibitors (94.2% vs 47.2%) & nitrates (58.2% vs 0.8%, both $p < 0.001$) were prescribed more often post-PCI. Despite similar LVEF (46.8% vs 48.2%), diuretics were prescribed universally post- CABG (99.1% vs 14.8%, $p < 0.001$). Calcium channel blockers were prescribed in $< 5\%$ & more often post PCI (4.9 vs 2.2%, $p < 0.001$).

Drug doses: For Aspirin, 150 mg OD was the commonest dose used (94.6% vs 88.2%; PCI/CABG). Clopidogrel 75 mg BD was used more often post PCI (82.5% vs 1.7%) while 75 mg od more post CABG (6.4% vs 95.2%). Statin 40-80 mg was prescribed more often post PCI (68.2% vs 0.3% and 9.8% vs 0% respectively, $p < 0.001$). Statin 10 mg was used in 82.5% post CABG vs 5.4% post PCI ($p < 0.001$). A 50 mg dose of betablocker was used in 74.2% post PCI vs 42.1% post CABG; 25 mg betablocker was prescribed in 47% and 21.1% of post CABG & post PCI patients (all $p < 0.01$).

Conclusions: Significant differences in prescription of GDMT exist at hospital discharge even in a tertiary centre. Post CABG, 7% and 53% patients were not prescribed a betablocker & ACEI respectively. Post CABG, patients were less likely to receive high dose statin or optimal betablocker dose & more likely to receive diuretics (irrespective of EF). Post-PCI, 80 mg statin was used in $< 10\%$. Such evidence practice gaps need to be rectified to improve cardiac care.

Pudendal artery angioplasty for the treatment of complex erectile dysfunction in males

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Background: Erectile Dysfunction (ED) is an important and growing health problem. It is estimated that more than 200 million men (between the age of 40 – 70 years) suffer from ED. The real prevalence could be much higher as it is underreported and undertreated. Out of the many etiologies, 80% of cases are of vasculogenic origin. Venous leak and arterial inflow problems (usually pudendal artery stenosis) are the most common

etiologies. In patients who fail PDE-5 inhibitors therapy (Complex ED), vasculogenic causes should be strongly suspected.

Methods: The workup is done by excluding the endocrinal, urological and psychological causes and then subjecting these patients to a penile Doppler study (after intra cavernosal injection of papaverine). In patients where the peak systolic penile velocity is less than 25cm/sec, pudendal artery stenosis is strongly suspected. These patients then undergo a selective angiography for identification of pudendal artery stenosis. If the stenosis is found, they are subjected to super selective pudendal artery cannulation and angioplasty or stenting using drug eluting balloon (DEB) or zotarolimus eluting stents (DES). Patients are followed up at 3, 9, 12 months and then after every year by Duplex scans.

Results: 36 consecutive worked up patients of complex ED with pudendal artery stenosis underwent pudendal artery angioplasty (with DEB or DES). The procedure was successful in all patients. There was no death, perineal or penile gangrene. The mean penile velocity increased from base line of 16cm/sec to 44, 50, 58cm/sec at 3, 6, 12 months respectively. Improvement > 4 points in International Index of Erectile Functions (IIEF -6) score at 3, 6 and 12 months were 68 %, 75 % and 78 % respectively.

Conclusions: Angioplasty of focal stenosis of internal pudendal artery by DEB or DES appears to be a very promising therapy for male erectile dysfunction. It is safe, feasible and leads to sustained improvement of male erectile dysfunction.

Endovascular treatment of superior vena cava syndrome because of central vein occlusion

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Background: Central venous occlusions (CVOs) are a common complication that may arise after the placement of central venous catheters, especially in patients of chronic renal failure undergoing maintenance hemodialysis and patients with indwelling pacemaker leads. Patients may present with Superior Vena Cava (SVC) syndrome (symptoms of upper limb and cranial venous hypertension leading to swelling of face and upper limbs) and inability to continue with hemodialysis. Till recently, there was no satisfactory and durable treatment for these patients, but of late, endovascular recanalization of CVOs has become feasible and a successful treatment option in these patients. Surgery carries a very high morbidity as is often unsuccessful.

Methods: Patients presented with SVC syndrome. Diagnosis of CVO was made by angiography. Anatomical details like site and length of occlusion, collateral pathways, presence or absence of thrombus and distal venous anatomy were noted. The CVOs were recanalised through either femoral, brachial or subclavian approach using 0.035" hydrophilic guide wires, extra backup telescopic catheters, non compliant peripheral balloons (Mustang, Boston Scientific) and self expanding stent implantation (Epic, Boston Scientific). Patients were kept on dual antiplatelet for one month followed by Aspirin 150mg daily. Hemodialysis was initiated immediately after the procedure.

Results: N = 97; Subclavian Vein - 35; Brachiocephalic Vein 13; Superior Vena Cava 23 and Combined Lesions - 26 Technical Success in 91 /97; Percutaneous Transluminal Angioplasty (PTA) in 69; Stents-22 and Catheter Directed Thrombolytic Therapy (CDTT) 23 Patency: Primary (at 6 months) : 48%, Secondary (at 1 year) : 87%.

Conclusions: SVC syndrome because of CVO is now amenable to interventional treatment. These patients go back to normalcy and maintenance hemodialysis immediately after the procedure. This is the largest reported series in India of SVC syndrome/CVO treated by Endovascular approach.

Endovenous Laser therapy by Laser blast technique for treating varicose vein – Experience of the largest series of 6,018 patients

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Background: Venous reflux is seen in about 8% of adult population. Till now surgery was considered to be the gold standard. Recently, Endo-Venous Laser Therapy (EVLT) has been used with great success with a recurrence rate of less than 7% after two years. This abstract discusses our results of 6018 successive cases of varicose veins treated by novel laser blast technique.

Methods: 6018 patients of severe sapheno-femoral incompetence were treated by EVLT using 25 watts Diode laser machine. Venous access was gained near the ankle using duplex scanning. A 5F sheath was inserted into the great saphenous vein and advanced upto 2 inches below the saphenofemoral junction. 810 μ m bare tip laser fibres were used and was advanced through the sheath. The position of the fibre tip was confirmed by the red light (at the tip) which is seen through the skin. The sheath and the fibre were then withdrawn while delivering the laser energy at a rate of about 1 mm/sec delivering about 12joules/pulse/sec. Individual perforators, short saphenous vein and extra-axial varicosities were treated and the completeness of the procedure was assessed by angiographic guidance. Patients were followed-up by duplex scan after one day, one month, six months and one year.

Results: N = 6018; Great Saphenous Vein (GSV) 3948, Short Saphenous Vein (SSV) 1520 and Both (GSV + SSV) 1428, Perforators 783.

Adjuvant Sclerotherapy / Perforator Ligation / ablation 140; Wavelength of LASER 810 μ m and System BIOLITIC.

Avg. lasering time 3 -5 mins, and avg. procedure time 62 mins
Procedural Success 6018/6018, Immediate Mobilisation 6018/6018

Complications included: DVT 17/6018, Pain 1268/6018, Swelling 78/6018, Ecchymosis 906/6018 and Pulmonary Embolism 0/6018.

Follow Up: Freedom from recurrence at 6 mnths - 97%; 12 mnths - 94%.

Conclusion: EVLT is an outdoor, quick, successful minimally invasive procedure to treat venous varicosities due to sapheno-femoral reflux. The patients' compliance is excellent, with very low recurrence rate of about 6%.

Prognostic value of plasma N-terminal pro-Brain natriuretic peptide and high sensitivity troponin T in patients with sepsis; correlation with C reactive protein level and 2D echocardiography

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Background: Increased levels of pro-BNP and Hs trop T as predictors of cardiac dysfunction and prognosis in congestive heart

failure and ischemic heart disease have been identified. But only a few studies identify their role in septic myocardial injury. Base line parameters and the level of Hs Troponin T in distinguishing septic myocarditis from acute coronary events are also not well studied.

Aim: To determine the role of the pro-BNP and hS troponin T in the context of outcome of septic patients; to analyze their correlation with c reactive protein level and 2d echocardiography findings. Base line parameters and level of hS troponin in helping to distinguish septic myocarditis from acute coronary events were also evaluated.

Methods and Results: 100 consecutive patients with sepsis were included. Levels of pro-BNP, Hs troponin T, C reactive protein were measured on the day of diagnosis of sepsis. 2d echocardiography was performed on the same day and repeated on the day of discharge. Patients had myocardial injury diagnosed by elevated Hs Troponin T, and elevated pro-BNP. Patients with Pro-BNP level >4000 pmol/L had increased morbidity and the level >25000 predicted 90% mortality. Level of hS troponin T showed a linear correlation with pro- BNP levels, but pro BNP was more sensitive in prognostication. Level of Hs Troponin T >500 was indicative of an acute coronary event rather than septic myocarditis. This correlated with ECG and echo findings and later with coronary angiogram in selective patients.

Conclusion: Pro-BNP and Hs troponin T may serve as useful laboratory marker to predict survival in patients with sepsis. Serial evaluation of Hs troponin T may also help to distinguish septic myocardial injury from acute coronary events.

Interventional approach for management of acute deep vein thrombosis (DVT)

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Background: Although DVT of calf veins is most common, 40% of DVTs occur in the femoral and iliac veins and have a high risk of pulmonary thromboembolism and Post Thrombotic Syndrome (PTS), which can be avoided by timely interventional management. Catheter Directed Thrombolytic Therapy (CDTT) and Pharmacomechanical Catheter-Directed Thrombolysis (PCDT), (combination of CDTT with percutaneous mechanical thrombectomy) is the best possible solution. This dual mechanism of action enhances the efficiency and rate of thrombus removal. It also uncovers the May Thurner syndrome in many cases.

Methods: Diagnosis was made by Duplex scan and venography. Patients with DVT extending to common femoral vein and above were included. Popliteal vein was accessed under Duplex guidance and a 6F sheath was introduced. Suction thrombectomy was done using 6F multipurpose guiding catheter and a multi side hole infusion catheter was used to deliver continuous intra-clot tissue infusion of tPA for 24-48 hrs. More than 50% angiographic clearance of the thrombus was used as criteria of success and if May Thurner syndrome was uncovered, left common iliac vein was stented by self-expanding stents. Patients were then kept on oral anticoagulants, to maintain an INR of 2.5-3.5.

Results: N = 26; Duration of DVT: \leq 14 days.

Involvement: Femoral Vein = 26 ; External Iliac Vein = 20 ; Common Iliac Vein = 13 ; IVC = 3

Procedure: Thrombolytic agent tPA.

Aspiration Thrombectomy (AT) = 26/26 ; CDTT = 26/26.

Reduction of Thrombus load: